

AGRICULTURAL HINTS

ROAD CONSTRUCTION.

The Two Essential Points to Be Aimed at by Builders.

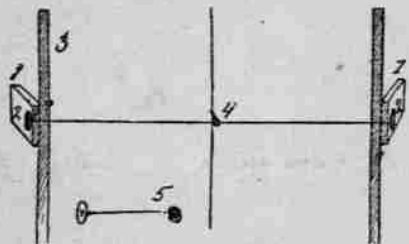
Prof. F. J. H. Merrill, in a paper read before the Albany institute, says that the question of good roads in this country is now at about the same stage at which it was in England a century ago. At that time roads were so bad that a general investigation was undertaken resulting in the formulation of certain rules for road building, whose adoption led to the construction of the fine highways for which Great Britain has so long been famous. The problem was then of great commercial importance, as England had no railroads.

The experience of over 2,000 years has shown conclusively that there are two essential points to be aimed at in the construction of a road. First, a hard, smooth waterproof surface; second, a thoroughly dry foundation. These principles were known to the Romans 300 years B. C. The surface of a good road may be of sufficient strength to resist the wear and tear of traffic, and smooth enough to prevent underwearing on vehicles. In connection with this, the soil beneath must be made dry, and kept dry. Therefore, the subject of road drainage is as important as that of road metaling. The best road covering is composed of angular fragments of some stone, which will grind on the surface into a dust, which, when wet, will bind or, in a measure, cement the fragments together, so that water will not penetrate. The angular form is essential to make the fragments interlock. The sizes should be quite uniform, except that the surface layer may consist of smaller fragments than the bottom course. The total thickness of this metaling must be at least six inches on a natural soil foundation. The fragments should not exceed 2½ inches in diameter, and should be rolled in two separate courses with a heavy steam roller until the surface is absolutely firm.

FARM TELEPHONE.

Good Results Can Be Obtained at an Expense of a Few Cents.

For a cheap, short-distance telephone, take a tin can (oyster or fruit) and punch a hole in the bottom large enough for the eye of a metallic button



CONSTRUCTION OF A FARM TELEPHONE.

to pass through. Next procure some fine copper wire and fasten to the button. Twist the end of wire down firmly with pincers (see 5 in the illustration) so that it will not stick up; then run through loops of leather, and fasten at other end in like manner. Draw the wire as tight as it will stand and the phone is ready for use. If the wire is kept tight it will work well for about 20 rods in still, cold weather. Copper wire costs about 30 cents per 100 feet. The illustration shows the telephone complete: 1, 1 are the tin cans; 2, 2, brass buttons; 3, 3, walls of buildings; 4, leather loop for support; 5, wire loop at button.—Farm and Home.

Room for Dressing Poultry.

When one has a good deal of poultry to dress yearly it will be found of advantage to have a room for that purpose. A lean-to to the henhouse will naturally be most convenient. If this is furnished with a skylight all the better. It should be light and large enough to give sufficient room for a stove to warm the room, as well as to keep the water hot for scalding or other purposes. The floor should be smooth and tight. A scantling should be put across the room at a convenient height, with a few spikes driven in on which to hang the birds while dressing; another scantling or two along the sides to hang up the dressed poultry to let cool and to wash heads and mouths.

How to Care for Plants.

To keep plants free from insects one of the best remedies is tobacco. Take a small package of strong tobacco and pour over it boiling water. When cool the plants should be set into the mixture and washed, leaves and all, besides being thoroughly soaked with it. Another remedy is a strong soap made of carbolic soap and water. Plants must be kept clean if they are to be healthy. The leaves should be washed occasionally in order that the dust may be removed. The leaves are the lungs of the plants, and of course they cannot perform their work correctly if pores are obstructed by dust.—Farm and Home.

Buy Wide-Tired Wagons.

Good roads facilitate business and make hauling economical. They are needed, but they cost money, and the great difficulty is to get the funds without burdening people who already feel their burdens heavy. One way to improve roads without much cost is to use wide-tired wagons; we do not mean that everybody should change instantly, but the next time a wagon is to be bought, see that it has wide tires.—Farm and Home.

STRAWBERRY TESTS.

The Varieties Most Suitable for Profitable General Cultivation.

At the recent meeting of the Ontario Experimental Union, held at the Agricultural college, Guelph, Ont. (Canada), Prof. H. L. Hutt, the experimenting horticulturist of the institution, gave a report on the results of the recent experiments with strawberries grown on the college grounds. He has observed an extra growth of plants as a result of the careful removal of the blossoms the first season. This only confirms our old experience, that in order to secure the heaviest crop the second year (which is the main and usually the only fruiting year, as strawberries are handled by good growers), we have to adopt the practice of preventing all fruit setting the same season that the bed is established. Then in order to have a full crop, we must have full matted rows. With varieties that are good plant-makers, like Wilson, Crescent, Haverland, Bubach, Warfield, etc., we have no difficulty in securing the full stand of plants, in an average fair season, even if in starting the bed we put the plants two feet apart. This is the distance which Prof. Hutt recommends for planting such sorts, while 18 inches is as much as poor plant-makers should be spread apart in the row at the start.

Next, for a heavy yield, we want the heavy yielders. Among them, Warfield was found to be at the head. Afton is much like it. Warfield has a good leaf and a very firm berry. Haverland is one of the best for home cultivation. Bubach was the 15th, and Crescent the 29th, in the order of best yielders. Haverland was found at the head in general health and power to resist rust. Among the perfect flowering sorts (those named all being pistillates), Saunders was found first in productiveness and vigor. Prof. Hutt prefers to grow the imperfect and perfect bloomers in alternate rows, in order to insure full fruit setting and therefore best yield. The question is what varieties to plant together. Haverland was the first to show bloom. Van Deman, a perfect-flowering sort, is also an early bloomer, and might be used to furnish pollen for the other. Lovett's Early and Gandy bloom soon after these, and, in a pinch, might be used for the same purpose. Haverland and Warfield are among the earliest to give ripe fruit. Rio stands second in the list, although it stands 43d in the order of yield. Michel's Early stands third for early, and gives a large yield for an early sort, but the fruit is small and soft. Warfield stands fourth for earliness, and is the great berry for the west, and for heavy land and plenty of moisture, but seems not so good for light, dry soils. Among the latest varieties, Prof. Hutt mentioned Edgar Queen, Equinox and Mrs. Cleveland. — T. Greiner, in American Gardening.

ORCHARD AND GARDEN.

Any soil that is too damp naturally to produce healthy trees should be avoided.

If only well-rotted and thoroughly-fined manure is used the garden can hardly be made too rich.

Lime is one of the best materials to apply to get rid of the white grub in the strawberry beds.

Wood ashes and poultry manure make the best fertilizers for onions. They can both be used as top dressing.

It is a good plan as well as an interesting experiment to try a few new varieties every year on a small scale.

When onions are to be raised from seed all reasonable care should be taken to sow the seed at the first opportunity.

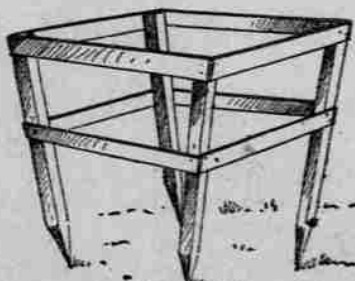
To grow large, rich currants, make the ground rich and keep it clean and mellow. Thin out the brush by cutting away the old stunted growth of wood, and leave the young, vigorous roots.

Strawberry plants that are well mulched are least affected by sudden change of weather. The mulch also prevents the plants from beginning to grow too early in the season and lessens the risk of their getting killed by late frosts.—St. Louis Republic.

GOOD TOMATO TRELLIS.

Get a Good Supply Ready Now for Use Next Summer.

The sketch shows a trellis for tomatoes that completely "fills the bill." The double side pieces hold up both



TRELLIS FOR TOMATOES.

lower and upper branches, while the flaring form of the trellis accommodates the spreading top. A dozen of such trellises, strongly made, will prove exceedingly satisfactory in the garden, and will last many years if carefully used. Do not wait till they are wanted next summer, but get a sufficient number of them ready now, when other work is not pressing, and store them in a barn or under a shed.—Orange Judd Farmer.

NOT THE PLACE FOR RELIGION.

Fashionable Church Warden Reproves Demonstrative Worshiper.

At one of the fashionable churches of the North side the congregation has extraordinary ideas of its uses if the senior warden is to be taken as authority. At a recent church celebration he informed one of the congregation that it was no place for a display of religious enthusiasm and some of the members are still wondering for what reason the church really is conducted.

The church is the most aristocratic upon the North side and has among its members the most exclusive families of its fashionable quarter. At the house of one of these a noted belle from New Orleans was recently visiting, and accompanying her upon her trip to the north as lady's maid was an old black mammy, who had attended her since her childhood days. Without this old lady the southern beauty was as helpless as a babe. So when she went to balls and dinners the faithful old creature attended her to see that her toilet was complete, remove her shoes and fasten her long gloves. And her attendance upon her beautiful young mistress went so far that she followed her to church to see that her hat was on straight, to remove her veil and to replace it after service. After her little duties had been performed for this charming mistress the old lady was told to take a seat in the gallery and return to the vestibule in time to be of service after church.

The old creature did as she was instructed. She plodded up the long gallery stairs and took a seat in the front row of the empty wooden benches. The beautiful choral service soon began and the old lady appeared deeply interested in the singing of the choristers. She leaned far over the gallery and took it all in. When the clergyman ascended the pulpit to preach his sermon the old black creature was all attention. Her interest increased as he proceeded, and when he warmed up to his text her enthusiasm grew and she encouraged him with cries of:

"God be praised!"

"Amen!"

"Hallelujah!"

"Praise the Lord!"

The congregation was greatly startled. Such a scene had never occurred within this stately structure. The minister looked up at the gallery, then paused and looked at the congregation in wonder. The old woman quieted down with the minister's hesitation, but her pleasure in his good words was shown as soon as he resumed his subject. And her cries were again begun with greater zeal.

Then the junior warden felt that the time had come to have the interruption stopped. He arose from his seat and looked toward the senior warden, whose duty it plainly was to end such an untimely scene. He nodded at the senior vestryman, whose popularity with the gentler sex he felt would tell him how to act on such an unprecedented occasion. The elderly warden, who is one of the most dignified of men, left his pew and tiptoed to the gallery where the hallelujahs and amens were still being called aloud. He went up the long dark stairs, stumbled down to where the old woman sat, gently laid his hand upon her shoulder and pressed his finger to his lips, with a shake of the head. It made no impression whatever upon the old lady. Then, in those tones which are so familiar to the North side maids and matrons, he said:

"You mustn't act so."

"I can't help it, chile," she called out.

"I can't help it. I've got religion."

"But don't you know this is no place for it," he sternly remonstrated.—Chicago Chronicle.

ORACULAR OBSERVATIONS.

Some Sharp Shots at Weak Spots of Mankind.

Everybody has some signs that never fail.

A man never gets too old to enjoy a love story.

Some people are proud because they have some rich relations.

It is astonishing how much some men talk to impart just a little information. A fellow can't help having a little respect for a man who beats him playing cards.

A man for whom everybody should feel sorry, is the man who can never see a joke.

It flatters a man to tell him he made a shrewd bargain, even if it was a little crooked.

A widower can't even look at an unmarried woman without the whole town talking about it.

The man who runs upstairs two steps at a time is not necessarily the one who has the most to do.

We have never been able to understand why some people want to wear spectacles and always look over the top of them.

People talk about "combinations of colors" in pictures, when they don't know an oil painting from a blotch of kerosene.—A. R. Miller, in Washington (Ia.) Democrat.

A Gentle Reproof.

A colored pedagogue in Texas has a very genteel way of calling his pupils donkeys. Last summer one of them, instead of looking at his book, gazed out of the window at a green field, whereupon the teacher exclaimed: "Whaffor is yer lookin' out de windy at yet grass? Hasn't yer had yer breakfast?"—Tammany Times.

POPULAR SCIENCE.

INTERESTING TESTS.

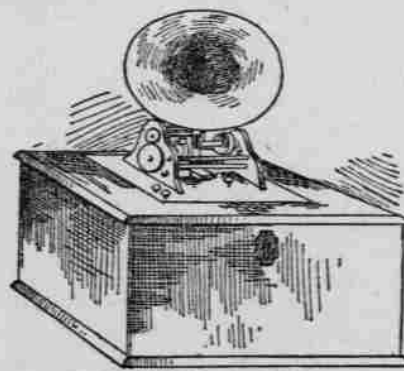
How the X Rays Affect the Outer Shell of the Brain.

Dr. J. B. Cocke, of Boston, accomplishes an enormous amount of clinical as well as scientific work. When three weeks old his sight was completely destroyed, and he has never had a conception of light or the looks of a thing. His other senses are very acute. He can touch a fabric and tell the stripes or figures upon it, and their color; by the slightest sound he correctly estimates the size of a room; by the touch of the hand at once recognizes persons; by slight feeling, the material, color, shape and use of objects. As he has never seen any of these, one wonders in what shape they present themselves to his sightless mind. He has written several successful novels, and is at present composing a comic opera, full of brightest airs. He earned his way through college by testing tobacco for the Lorillards, by touch, for many years. The X rays have opened a new door to him, and he enters it with excited interest. In the private laboratory of the Boston university school of medicine experiments were conducted in which the tube used was a specially constructed instrument which gives the most intense Roentgen ray of any tube heretofore made. It was attached to a coil which produced an electric current of nearly 2,000,000 volts. Seated in front of the tube, glowing with yellowish green light, at a distance of four feet, Dr. Cocke held his head down, so that the rays struck on its top. His first sensation was indescribable, and disappeared the moment the light was cut off, and instantly felt when the tube was in glow again. He accurately described outlines of objects held half way between his head and the light. The sudden whirling of an object or quick substitution of one for another caused an attack of vertigo. He said he saw nothing, but that objects gave him an impression of weight and extension. Whether they would do so in brains less acutely sensitive and magnificently developed is questionable; but it is a new step in the path of the wonderful light. It seems as if the cortex or outer shell of the brain were rendered fluorescent, like the sensitive plate, and the shadow of these objects was communicated to it, and then transmitted to the visual areas at the posterior part.—Chicago Inter Ocean.

IT MAGNIFIES ODORS.

Device That Acts as a Microscope in Detecting Smells.

Among the latest inventions, says the St. Louis Republic, is a machine which will take a liquid that has heretofore been regarded as odorless and distill the most delicate perfume. A drop of perfume or essence placed on the receiver will, on applying the nostril to the nosepiece or opening, produce an overpowering stench that would in a very short time, if continued, cause symptoms of suffocation. The instrument can be utilized in nearly every walk of life. To the grocer it will prove invaluable in detecting adulterations of goods. The chemist, druggist and physician, of course, can find ready use for it in their business, while it has been suggested that bank paper can be tinted with a special odor, imperceptible to the ordinary sense of smell,



SMELLING MACHINE.

but which could readily be detected by the scentograph, thus greatly lessening the liability of banks to fraudulent operators. It is also claimed for the machine that it will become popular in the homes of the wealthy, for by the aid of its mechanism the atmosphere of a large mansion can be kept constantly permeated with a most delicate and choice perfume at a nominal expense. For hospital and sick rooms its service will prove inestimable. The machine itself is a small affair, about 12 inches square and 8 inches high. It is made of wood, and the opening where the nostrils are applied is nickel plated.

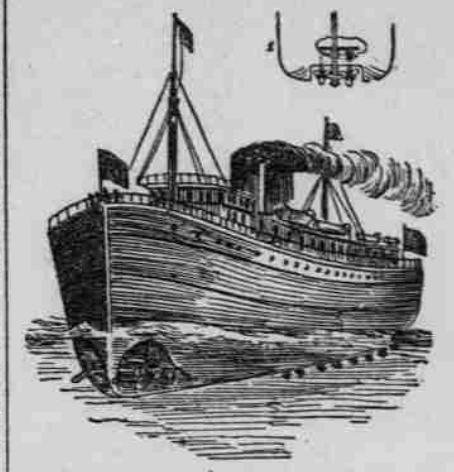
Meat Preserved by Electricity.

Since it has been discovered that foreign substances may be driven into animal tissue by means of electricity, a provision merchant of Rio de Janeiro has been preserving meat by the principle of cataphoresis. The meat is placed in a 50 per cent. solution of common salt and a continuous current of electricity passed through the whole. In ten or twelve hours the meat is removed and hung up to dry, being completely salted. A current of 100 amperes, with the electromotive force of eight volts, may be used in working a bath of 3,000 liters of brine in which 1,000 kilos of meat are immersed. The electrodes must be of platinum, since, if zinc or iron were used, the metallic salts formed would be injurious.

PROPELLING VESSELS.

New Ideas Advanced by Conrad Odinet, a New York Inventor.

According to the improvement represented in the accompanying illustration, lengthwise channels are formed, by means of housings, at each side of the keel of a vessel, and in each of these channels is located a shaft carrying a number of screws, the shafts being geared with vertical shafts operated by one or more motors of any preferred description within the vessel. The improvement has been patented in the United States and several foreign countries by Conrad Odinet, of New York city. It is designed that, with this construction, a material increase of speed may be obtained without employing much more power than at present, and that the vessel will be able to turn as upon a pivot, the propellers acting substantially as a rudder. The propellers, placed so low down, will be constantly in the water, and never liable to "race," while they will also



ODINET'S PLAN FOR PROPELLING VESSELS.

thoroughly ballast the vessel and add stability to the hull, being themselves protected from shot or shell in case of hostile attack. Hinged to fold close to the keel, at the forward ends of the channels, are gates by which the channels may be closed, to check or stop the forward movement of the vessel, the gates being moved by conveniently arranged levers within the vessel. In addition to the bottom propellers the ordinary stern propeller may be employed if desired. This improvement is designed for use with but slight changes in the present method of hull construction, as may be necessary in providing for the longitudinal housing on the bottom of the hull.—Scientific American.

CHEAP ELECTRICITY.

Windmills Are Now Being Successfully Used as Generators.

Comparatively little use has been made of windmills for the generation of electric current, but that such a plan is quite feasible under many conditions hitherto thought to be unfavorable is seen in a plant recently installed in Massachusetts. In this case a large house, stables and grounds are lighted by electricity, and the windmill provides all the power. In previous experiments in utilizing wind power for electric lighting trouble has arisen from the variability of the wind and the resulting fluctuations of the electric pressures. To overcome this difficulty the sawmill shaft is now connected with a speed equalizer, which stores energy mechanically, and so counterbalances the temporary subsiding of the wind. The wind power, after having been converted into electric energy, is conducted to a system of storage batteries which constitute the current supply of the plant. One of the best points of the installation is that it is almost entirely automatic. There is no personal supervision necessary, and the plant needs looking to (for oiling principally) but once or twice in a fortnight. Another feature of the plant is that it can be duplicated for from \$600 to \$800, and as it can be run for a dozen years, with practically no expense beyond the cost of lubricants and an occasional cleaning, it brings a private electric supply within the reach of a large number of people. It is found that the actual wind energy available for the equipment is far in excess of the requirements of ordinary residences, the storing capacity being ample to bridge over any possible period of calm. The objections to former systems of windmills have been carefully avoided, and the plant has been so well adjusted that it is possible to use a much lower rate of wind than has ever been attempted before.

How to Silence an Exhaust.

A noisy exhaust may prove an intolerable nuisance to near-by households. A miller who learned this fact from the number of complaints rained down on him, tried quite a number of hoods, exhaust heads, mufflers and other attachments. Failing to reduce the noise, he removed the exhaust pipe, and put in a very large pipe in its stead. The sound was clearer and more distinct than before. In despair he carried his large pipe 100 feet from the mill, and, to the surprise and relief of everybody interested, the steam lost its sharp bark, and came out in a steady and almost noiseless stream. The long pipe did it.

Not as Bad as That.

It is noticeable, however, that in most cases the office is not compelled to employ anyone to hold the man after it has found him.—Chicago Journal.